

EXECUTIVE SUMMARY
AIRCRAFT ACCIDENT INVESTIGATION
RQ-4A GLOBAL HAWK UAV ACCIDENT
EDWARDS AFB

6 DECEMBER 1999

On 6 December 1999, at 1617 (0017 Zulu), Air Vehicle RQ-4A Global Hawk UAV, S/N 95-2003, accelerated to an excessive taxi speed after a successful, full-stop landing. The air vehicle departed the paved surface and received extensive damage to the electro-optical/infra-red (EO/IR) sensor when the nose gear collapsed. Air vehicle came to rest 150 yards south of runway 22 on Edwards AFB. No damage to government or private property, other than the air vehicle, was sustained. The damage to the air vehicle, including the sensor package, is estimated at \$5.3 million. Global Hawk AV 3 returned from its ninth flight prematurely due to a low temperature condition in the forward avionics bay. The most likely cause of this low temperature condition is the fuel bypass valve being too far open, cooling the avionics below their design limit. The air vehicle transitioned to a preplanned contingency route and returned to base. After the air vehicle landed and stopped on the runway, the command and control officer commanded the vehicle to taxi. The air vehicle accelerated in an attempt to attain the preprogrammed commanded ground speed of 155 knots.

There is clear and convincing evidence that the primary cause of this mishap was the execution of a commanded ground speed of 155 knots for a taxi waypoint on the contingency mission plan. The excessive commanded ground speed was introduced by a combination of known Air Force Mission Support System and Global Hawk Aircraft/Weapon/Electronic software problems. Once the erroneous taxi speed was introduced, the mission planning and mission validation processes failed to recognize or correct the error.

The air vehicle autonomously executed the taxi portion of the mission plan, ultimately causing it to depart the paved surface. Due to limitations in the Launch and Recovery Element, there was insufficient time for the test team to recognize the situation and stop the air vehicle prior to it departing the paved surface.

Under 10 U.S.C. 2254(d), any opinion of the accident investigators as to the cause of, or the factors contributing to, the accident set forth in the accident investigation report may not be considered as evidence in any civil or criminal proceeding arising from an aircraft accident, nor may such information be considered an admission of liability by the United States or by any person referred to in those conclusions or statements.